Period One: Project Plan

Goals and Tasks for Botball 2019

<u>Game Goals and Tasks:</u>

1. Goal: Organize the team into smaller subgroups to increase participation and productivity by *January 29*
    a. Task: Establish leaders of the subgroups by *January 29*
    b. Task: Set dates for extra meetings for each subgroup outside of official club meetings by *January 29*
    c. Task: Organize each subgroup into builders and coders by *January 30*
2. Goal: Formulate a simple but effective game plan for each subgroup by *February 5*
    a. Task: Study the game board and scoring guides by *February 1*
    b. Task: Debate and vote on the most efficient strategy by *February 5*
3. Goal: Construct our practice game board by *February 12*
    a. Task: Create a list of necessary parts by *January 29*
    b. Task: Acquire (by purchasing and/or ordering) the parts by *February 7*
    c. Task: Assemble the practice game board by *February 12*

<u>Robot Building Goals and Tasks:</u>

1. Goal: Build prototypes of appendages for both robots by *February 12*
    a. Task: Sketch rough designs for each appendage needed to accomplish the tasks decided by the team's game plan by *February 7*
    b. Task: Test various claw prototypes and select the best design by *February 12*
2. Goal: Attach and fine-tune appendages for the Create robot by *February 19*
    a. Task: Consult the parts list and securely attach all appendages using approved materials by *February 14*
    b. Task: Add counterweights as necessary to improve stability by *February 16*
    c. Task: Check that the completed robot fits inside the starting box and if not, make modifications to appendages by *February 19*
3. Goal: Attach and fine-tune appendages for the LEGO robot by *February 26*
    a. Task: Consult the parts list and securely attach all appendages using approved materials by *February 28*
    b. Task: Add counterweights as necessary to improve stability by *March 2*
    c. Task: Check that the completed robot fits inside the starting box and if not, make modifications to appendages by *March 5*

Programming Goals and Tasks:
1. Goal: Code the sensors, motors, and servos for all appendages by *March 12*
   a. Task: Test and record integer values for all sensors and servos by *March 5*
   b. Task: Code all functions required to manipulate game pieces with appendages by *March 12*
2. Goal: Complete the code for the Create robot by *March 26*
   a. Task: Code all movements connecting usages of appendages by *March 19*
   b. Task: Run trials to test the completed code and ensure its compatibility with the LEGO robot by *March 26*
3. Goal: Complete the code for the LEGO robot by *April 9*
   a. Task: Code all movements connecting usages of appendages by *April 2*
   b. Task: Run trials to test the completed code and ensure its compatibility with the Create robot by *April 9*

Documentation Goals and Tasks:
1. Goal: Complete Period 1 Documentation a day early by *February 5*
   a. Task: Compile a list of meeting days and scheduling conflicts by *January 31*
   b. Task: Meet with subgroup leaders to set building and coding goals by *February 2*
2. Goal: Complete Period 2 Documentation a day early by *March 12*
   a. Task: Complete the video for the Mechanical Review section by *March 7*
   b. Task: Create a Github account and upload a piece of code for the Code Review section by *March 2*
   c. Task: Perform at least one change to the Github code by *March 10*
3. Goal: Complete Period 3 Documentation a day early by *April 23*
   a. Task: Set up computers and take the survey by *April 21*
   b. Task: Have a whole team discussion about lessons learned by *April 18*

Schedule Conflicts:
1. School closed for February break; no team meetings from *February 17-23*
2. School closed for spring break; no team meetings from *April 14-20*
3. The school's Academic Decathlon club competes; some team members will be gone on competition day, *April 27*

Team Organization:
1. Project Meeting Times

Note: Our team runs as an afterschool club, and divides into three smaller subgroups to increase participation and productivity. We therefore have both whole club meetings and subgroup meetings, although our whole club competes as one team in competition.

a. Project meeting times began with the Botball Workshop date, *January 25-26*
b. Official whole club meetings are every Tuesday from 2:45 P.M. to 3:45 P.M. Some club members continue working beyond this timeslot.
c. Each sub-group meets on a separate day every week (in addition to Tuesdays, our official club meetings) to get extra time to plan, build, and code

Schedule of Team Meetings

January

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

March

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Key:
Yellow Dates: Botball Workshop
Blue Dates: Official Whole Club Meeting Dates
Red Date: Botball Competition Day
Green Dates: Schedule Conflicts

2. Division of Labor

Note: Each subgroup will be in charge of creating two robots - one Create and one LegoBot. The entire Ashland High School Team will end up with six robots total. The most effective and consistent robots will be chosen through internal competitions and run on competition day.

a. Team Division Chart

	Subgroup 1	Subgroup 2	Subgroup 3
Captain(s)	Mei K., Adora L.	Ben E., Daphne G.	Aaron G., Jewel H.
Builder(s)	Braiden P., Attila P., Alex V., Kevin R, Arjun I.	Ben E., Srihari S., Disha S., Drew M., Robbie T.	Aaron G., Ira K., Josh M., Galwin G., Akarsh A.
Coder(s)	Mei K., Adora L., Aditya K., Dillon D.	Daphne G., Sarah C., Avo B., Henry K.	Jewel H., Peter S., Srijan S., Josh M.
Documenter(s)	Mei K., Adora L.	Srihari S.	Jewel H.

b. Robot Creation Team Chart

	Subgroup 1	Subgroup 2	Subgroup 3
Create	Mei K., Attila P., Kevin R., Aditya K.	Ben E., Daphne G., Srihari S., Avo B. Robbie T.	Jewel H., Ira K., Galwin G., Akarsh A., Srijan S.
LegoBot	Adora L., Alex V., Braiden P., Arjun I., Dillon D.	Drew M., Disha S., Sarah C., Henry K., Rayna J.	Aaron G., Josh M., Josh M., Peter S.

c. Each subgroup has a variety of students from all grades, with various amounts of experience and fields of expertise - building, coding, and/or documenting. Captains are chosen from a group of more experienced Ashland High School Robotics Club members and are responsible for organizing the group, making sure everyone is on task, and working efficiently. They also work as the main members for any communication between subgroups. If their teammates have any questions, concerns, or suggestions, captains are responsible for listening attentively and answering their questions.

3. Conflict Resolution

To avert any major conflicts, the team is expected to remember to:

1. Be open-minded and listen to every team member's ideas or opinions.
2. Think of a back-up plan in case the original idea fails.
3. Set aside any personal grudges or conflicts.
4. Settle any conflicts that may rise by discussing them as a team during the meetings and figuring out solutions collaboratively.

If major conflicts arise, team members will:

1. Take a vote on the conflict; majority wins.
2. If a ⅔ majority of the team cannot be reached, conflicts will be resolved by the Team Captain(s).
3. In cases where the Team Captain(s) cannot peacefully resolve the situation, they can bring their issues to the student Club President, Aaron G.
4. Though extremely unlikely, if a conflict is still not resolved, the adult club advisor, Mr. McGowan, will get involved.